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ABSTRACT

Reading educators stress the importance of teaching reading study skills in college content area classes. Thus, a freshman level reading education course offered the opportunity simultaneously to model effective practices for preservice teachers and to conduct a study of the gains in both content knowledge and reading study skills for students who had been taught study skills integrated with course content. Subjects, 121 undergraduates enrolled in 4 sections of a freshman level reading education course, were randomly assigned to experimental or control groups. After training, the control groups tutored primary grade children in public schools, while the experimental groups attended a standard lecture-based college class in which reading study skills were taught concurrently with the course content. Analysis of pretest and posttest data showed that the experimental group reported significantly improved study habits and attitudes as opposed to the control group. Course content scores also proved that if subjects were taught course content, they learned it, and that merging course content with reading study skills instruction did not hinder content learning. Reading comprehension and vocabulary also improved for the experimental group. Students also used what they learned in other classes and in their own teaching. (JL)

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Improving Reading/Study Skills in a College Content Class*

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Abstract

Preservice teachers enrolled in four sections of a freshman level reading education course were randomly assigned to an experimental or control group. The students in the experimental group were taught reading study skills concurrently with the course content. The control group tutored children in an elementary school. Analyses of pre and posttest scores for course content, the Survey of Study Habits and Attitudes, and the Stanford Diagnostic Reading Test indicated significant gains for the experimental group on course content and the SSHA. Improvement in general reading achievement on the SDRT approached significance. Results were interpreted as evidence that when preservice teachers lack effective reading study habits and attitudes, reading educators can develop these skills as students master course content.

Teaching Reading Study Skills and Course Content

to Preservice Teachers

For years reading educators have been telling teachers that the most effective place to teach the reading skills useful in the mastery of a subject area is the content classroom (Herber, 1978; Vacca, 1975). At the secondary level most reading instruction is still offered in specialized reading courses, although Witte & Otto (1981) report that content teachers are becoming aware of students' reading needs. Most colleges and universities offer help to postsecondary students in reading and other basic skills through learning centers (Devirain and others, 1975) or basic skills courses (Grant & Hoeber, 1978) unrelated to specific content areas. Monteith (1978), however, reports a trend for colleges to teach basic skills courses parallel with content courses. In such courses students are taught basic skills needed to learn specific course content. For example, adjunct courses offer basic skills independent of, but pertinent to, disciplines such as biology, psychology, and law (Monteith, 1978).

Ideally reading educators would advocate the merger of reading study skills in the college content class. While such a practice is uncommon, studies which reflect efforts to improve

reading study skills in college content classes have been reported. For instance, calculus students who received reading instruction concurrent with math instruction scored significantly higher on a final exam than their counterparts who did not receive instruction in reading skills (Lovelace & McKnight, 1980). Jacques & Corrin (1981) also report success both in improving reading skills and social science achievement with first year college students in a social science class. Whether reading educators employ the instructional strategies they urge content teachers to use is an unanswered question. Certainly reading education would qualify as a content area.

At the present time teacher educators are expressing concern that preservice teachers lack basic skills, particularly reading study skills. In fact, some states (e.g., Texas) will soon require that candidates for teaching certificates pass basic skills tests. That being the case, reading educators have a unique opportunity to "practice what they preach." That is, if preservice teachers possess marginal reading study skills, the reading education college classroom offers an ecologically valid site to combine course content and reading study skills instruction.

Teaching four sections of a freshman level reading education course, Fundamentals of Reading, offered the authors the

opportunity to combine the teaching of reading study skills and course content. By integrating reading study skills with content, we could also model effective practices for preservice teachers to later emulate. Two sections of the course were scheduled for on campus lecture classes and two sections were scheduled as a field experience in public schools. Therefore, gains in both content knowledge and reading study skills for students who had been taught study skills integrated with course content could be compared to gains for students who had been taught neither.

Methodology

Subjects. The subjects were 121 undergraduates at a central Texas university enrolled in four sections of a freshman-level reading education course. (55 freshman, 47 sophomores, 17 juniors, and 2 seniors). All students in the course participated in the experimental or control activities, but data was collected only from those who volunteered to participate in the study.

Materials. Fifteen articles from professional journals, research reports, or portions of texts augmenting the course lectures were assigned at intervals. A study guide was constructed for each reading assignment and focused on the important points and the structure of the text. Transparencies were made to illustrate and clarify lecture concepts. Handouts outlined

and illustrated the reading study strategies taught in class.

Procedures. Subjects were randomly assigned to an experimental or a control group at both of the scheduled class times, as illustrated in Figure 1.

INSERT FIGURE 1 ABOUT HERE

After training, the control groups tutored primary-grade children in public schools using Houghton Mifflin Tutorial I (Ellson, Harris, Moran, Berry, Fields, & McSoley, 1973). The experimental groups attended a standard lecture-based college class. Course content included topics such as views of the reading process and instructional implications, history of American reading instruction, and characteristics of good and poor readers. In addition to the usual instructional procedures in a lecture-based class, the following procedures were used:

1. Initially students were taken to the library and shown by a librarian and course instructor how to use the resources (e.g., reference books, microfilm, microfiche) needed to complete course assignments.

2. Students were given a study guide to accompany each reading assignment. Guides were due and discussed the class period after assignment. Most study guides were collected, graded, and returned to students with written comments.

3. Students were taught to take notes using the Cornell method (Paulk, 1974) and used that strategy in class. Instruction included using notes as a study aid to prepare for quizzes and exams.

4. Students were required to keep a log of how they spent their time for 2 days during the second week of the semester. Then time management techniques were taught with students making a weekly schedule which included class time, study time, and recreational time.

5. When the major course project was assigned, students were taught how to analyze the project tasks, and set deadlines for each task.

6. Students were required to keep a notebook containing class notes, handouts, and all other class materials organized by course topic. The notebook was checked for organization and content three times during the semester.

7. Students were taught a five step summarizing procedure (Day, 1980). This procedure was presented, modelled, and then practiced. Students turned in three summaries. These were evaluated and returned with specific written comments pertaining to their mastery of the summarizing procedure.

8. Students were taught vocabulary terms grouped by course topics. Structured overviews were used to introduce the vocabulary and to illustrate how new topic information was

organized and related to known topics.

9. Students were provided with a brief outline of the day's lecture to guide notetaking.

10. Students were administered two short quizzes in addition to a midterm and a final.

Dependent Measures. The four dependent measures were: raw scores on the Survey of Study Habits and Attitudes, Form C (Brown & Holtzman, 1967); acaled scores for the Vocabulary and Comprehension subtests of the Stanford Diagnostic Reading Test, Blue Level (Karlsen, Madden, & Gardner, 1977); and a researcher-designed multiple-choice Course Content test.

Analyses. Four BMD08VA analyses of variance with repeated measures were computed, using an unweighted means solution. For each analysis the result of interest was the pre/posttest scores x experimental/control group interaction. The F for this interaction computes to the identical F for gain scores.

Results

The analysis of variance for repeated measures on the Course Content raw scores revealed a significant pre-post x group interaction ($F_{1,102}=153.59, p < .0001$). This interaction is illustrated in Figure 2. Post hoc Newman-Kuels tests (see Table 1) indicated no significant difference between control and experimental groups on the pretest, and a significant difference between control and experimental groups of the posttest, and a significant difference between pre and posttest scores for the experimental group.

INSERT FIGURE 2 ABOUT HERE

INSERT TABLE 1 ABOUT HERE

The analysis of variance for repeated measures on the Survey of Study Habits and Attitudes (SSHA) raw scores revealed a significant pre-post x group interaction ($F_{1,101}=11.93$, $p < .001$). This interaction is illustrated in Figure 3. Post hoc Newman-Kuels tests (see Table 2) indicated no significant difference between control and experimental groups on the pretest, a significant difference between control and experimental groups on the posttest, and a significant difference between pre and posttest scores for the experimental group.

INSERT FIGURE 3 ABOUT HERE

The analysis of variance for repeated measures on the standard scores for the Vocabulary Subtest of the Stanford Diagnostic Reading Test (SDRT) revealed a significant pre-post x group interaction ($F_{1,98}= 3.81$, $p < .05$). This interaction is illustrated in Figure 4. Post hoc Newman-Kuels tests (see Table 3) indicated no significant differences between or within

groups, although the difference between experimental and control group posttest scores approached significance.

INSERT FIGURE 4 ABOUT HERE

INSERT TABLE 3 ABOUT HERE

The analysis of variance for repeated measures on the standard scores for the Comprehension Subtest of the Standford Diagnostic Reading Test (SDRT) revealed no significant pre-post x group interactions, although this interaction did approach significance ($F_{1,94} = 3.52$, $p < .06$).

General Discussion

The purpose of this study was to improve reading study skills while teaching course content to preservice teachers. "Reading study skills" is a general term for an array of behaviors learners could practice (e.g. outlining, summarizing, reading graphics, using the SQ3R procedure, notetaking). However, the content of the course rather than a predetermined list of skills dictated the reading study skills that were taught. In other words, the skills needed to succeed in a particular assignment were taught in reference to that assignment. Herber states that:

When reading skills are taught as means to an end, that

> end being an understanding of the content of a curriculum, they are more likely to be learned than when they are taught for their own sake without regard for the content of the curriculum or the material they will ultimately be applied to. (p.5).

Furthermore, this preserved ecological validity and made results more potentially useful to the college content teacher.

The results of the analysis for the SSHA scores clearly revealed that students in the experimental group reported significantly improved study habits and attitudes as opposed to the control group. On the pretest the average score of both groups was below the national average for freshmen. The average posttest score of the experimental group was above average. These results imply that preservice teachers may indeed lack proficient reading study habits and attitudes, but can and do improve in this area when offered the opportunity to do so in a content classroom.

The results of the analysis of the Course Content scores was as straightforward. For both groups the average pretest score was 55% correct. This indicates that students have some knowledge of the course content when they enter the course, possibly gained from their own experiences learning to read. Posttest scores for the control group averaged 59% while the posttest scores for the experimental group averaged 87%. If subjects were taught the course content, they learned it. More importantly, these data

demonstrate that merging course content with reading study skills instruction does not hinder content learning. On the contrary, when considered with the significant SSHA results, the data suggest that reading educators can do more for preservice teachers than simply offering course content. They can develop reading study habits and attitudes concurrently.

Of further interest were the results of the analysis of the vocabulary and comprehension subtest scores of the SDRT. Although not specifically addressed in class, it was hoped that general reading achievement as measured by a standardized test would show significant improvement when reading study skills were intergrated with course content. Certainly, general reading achievement and reading study skills appear to be closely related, and therefore, some degree of transfer might be anticipated. The pre/post x group interaction for the Comprehension subtest scores did approach significance. Inspection of the data reveals a trend in the desired direction. There was a nine point pre/post difference in the standard scores for the control group but a 56 point difference for the experimental group. The pre/post x group interaction of the Vocabulary subtest was significant. The pre/post differences on the vocabulary scores for the experimental group approached significance while those of the control group did not. This trend was responsible

for the interaction.

Student feedback during and after the time the experimental group received instruction revealed additional student benefits. Students believed they learned a great deal about studying. They also reported using summarizing and notetaking strategies in other classes. Moreover, when members of the experimental group later participated in the undergraduate reading practicum with junior high students, they taught the reading study skills learned in class to their students. Apparently modelling effective instruction promotes transfer. That is, preservice teachers who observed and learned the modelled strategies were able to transfer that information to a teaching situation.

This study is being replicated with three groups: a control group that tutors in the public schools; a control group that receives course content but no reading study skills instruction; and an experimental group that receives both course content and reading study skills instruction. The second control group will more clearly determine the effects of teaching reading study skills on the mastery of course content. A one year delayed posttest will also be administered to as many of the original subjects as can be located in order to determine the long term effects of the experimental treatment.

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	8:00	11:00
Instructor 1	control	experimental
Instructor 2	experimental	control

Figure 1. Instructor, group, and time schedules

COURSE CONTENT

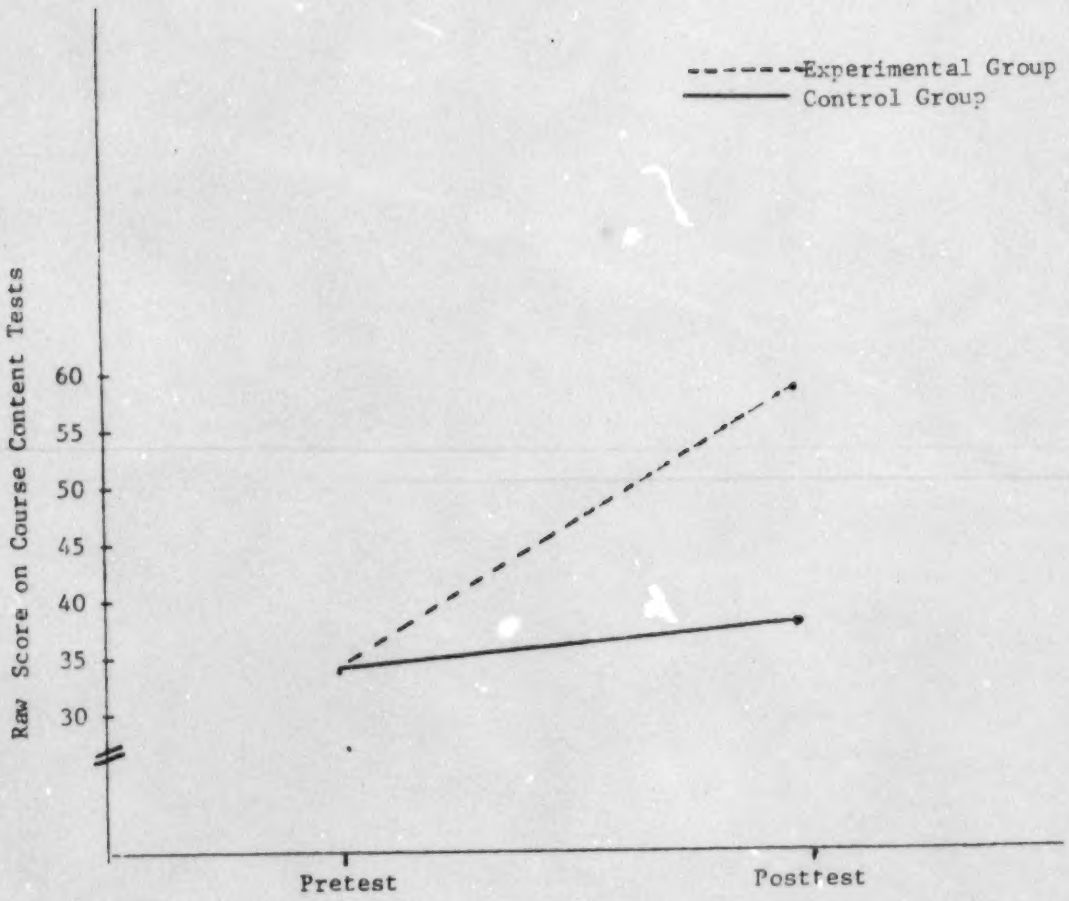

Figure 2. Pre/Post x Experimental/Control Interaction

SURVEY OF STUDY HABITS AND ATTITUDES

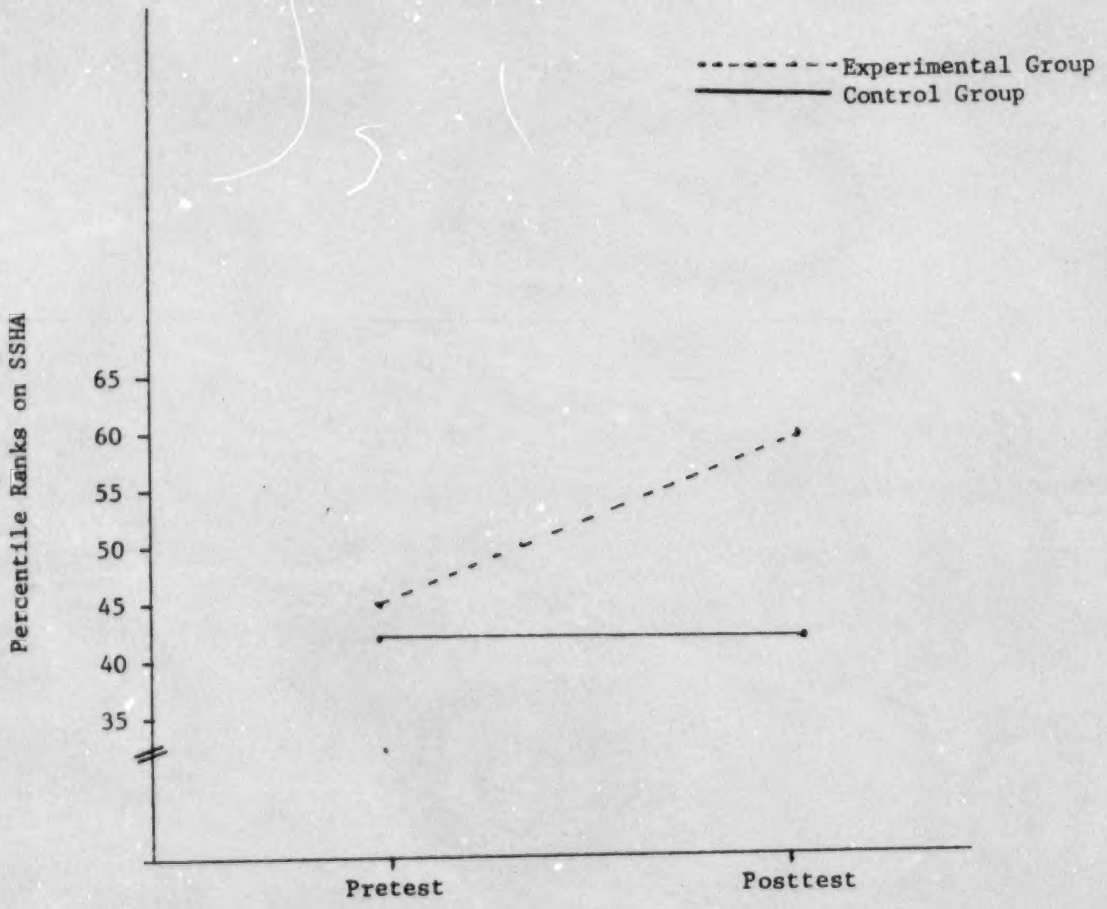

Figure 3 Pre/Post x Experimental/Control Interaction

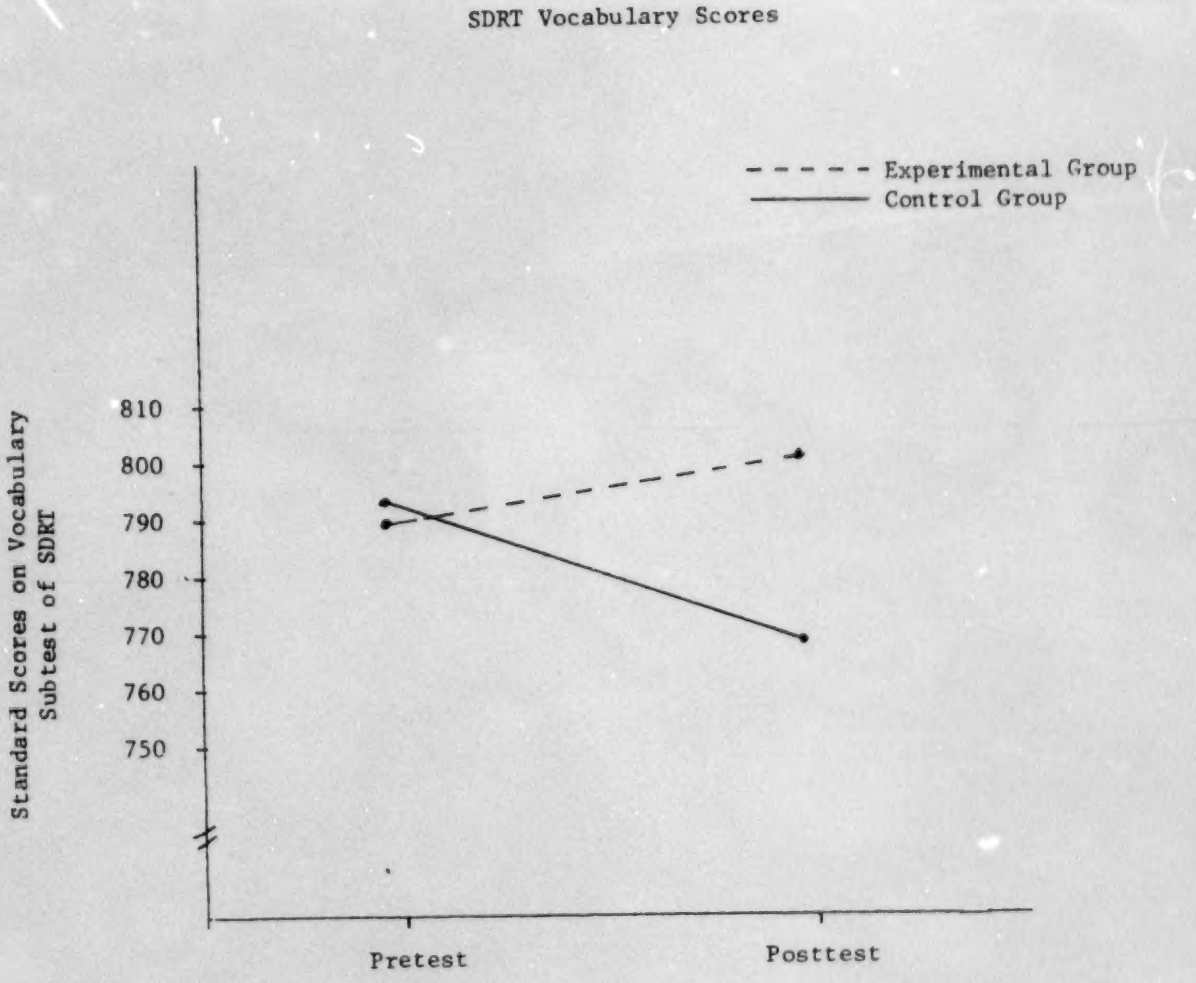

Figure 4. Pre/Post x Experimental/Control Interaction

TABLE 1

NEWMAN-KUELS TEST FOR DIFFERENCES AMONG MEANS - CONTENT TEST

	Experimental Pretest $\bar{X}_1$	Control Pretest $\bar{X}_2$	Control Posttest $\bar{X}_3$	Experimental Posttest $\bar{X}_4$
Means	33.410	33.715	35.708	52.133
$\bar{X}_1$ = 33.410		.305	2.30**	18.70*
$\bar{X}_2$ = 33.715			1.99	18.40*
$\bar{X}_3$ = 35.708				16.41*
$\bar{X}_4$ = 52.133				

* Significant at .01 level
** Significant at .05 level

TABLE 2

NEWMAN-KUELS TEST FOR DIFFERENCES AMONG MEANS - SSHA

Means	Content Posttest 41.136	Content Pretest 42.246	Experimental Pretest 45.521	Experimental Posttest 59.908
41.136		1.11	4.39	18.77*
42.246			3.28	17.66*
45.521				14.39*

*Significant at .01 level
**Significant at .05 level

TABLE 3

NEWMAN-KUELS FOR DIFFERENCES AMONG MEANS-VOCABULARY, SDRT

Means	Control Posttest 772.16	Experimental Pretest 792.92	Control Pretest 794.93	Experimental Posttest 805.09
772.16		20.76	22.77	32.93
792.92			2.01	12.17
794.93				10.16
805.09				

* Significant at .01 level
** Significant at .05 level